SECTION 10. TMDL IMPLEMENTATION AND ADAPTIVE MANAGEMENT

10.1 Current Excess Loadings and Future Growth

As an assumption of the Chesapeake Bay TMDL, EPA expects Chesapeake Bay jurisdictions to account for and manage current excess loadings above WLA and LA, as well as new or increased loadings of nitrogen, phosphorus, and sediment. Such loadings are now or might be introduced by point and nonpoint sources as a result of current land use and future growth and development and land use changes.

10.1.1 Designating Target Loads for New or Increased Sources

Where the TMDL does not provide a specific allocation to accommodate new or increased loadings of nitrogen, phosphorus, or sediment, a jurisdiction may only accommodate such new or increased loadings through ~~a~~ a trading mechanism allowing for quantifiable and accountable Offset and Uplift credits ~~offsets~~ of the new or increased load in an amount necessary to implement the TMDL and applicable WQS in the Chesapeake Bay and its tidal tributaries. Therefore, the Chesapeake Bay TMDL assumes and EPA expects the jurisdictions to accommodate any new or increased loadings of nitrogen, phosphorus, or sediment that do not have a specific allocation in the TMDL with appropriate Credits ~~offsets~~ supported by credible and transparent trading ~~offset~~ programs subject to EPA and independent oversight. If a jurisdiction requests a specific allocation for future growth in its final Phase I WIP, EPA will evaluate whether to include such an allocation in the final TMDL.

10.1.2 Trading ~~Offset~~ Programs

EPA expects that current excess, new, or ~~or~~ increased loadings of nitrogen, phosphorus, and sediment in the Chesapeake Bay watershed that are not specifically accounted for in the TMDL's WLA or LA will be offset and an environmental uplift provided by loading reductions from other sources where such ~~offset~~ ~~c~~Credits are generated under programs that are consistent with the definitions and common elements described in Appendix S. These definitions and common elements are important to ensure that Credits ~~offsets~~ are created ~~achieved~~ through reliable pollution controls and that the goals of the Chesapeake Bay TMDL are met.

EPA expects ~~such~~ the jurisdictions to develop ~~offset~~ trading programs that are credible, transparent, consistent with the definitions and common elements set out in Appendix S, and subject to EPA and public oversight. Any such trading program ~~offsets~~ and Credits are expected to account for the entire delivered nitrogen, phosphorus, or sediment load after accounting for location of the sources, delivery factors affecting pollutant fate and transport, equivalency of pollutants, and the certainty of any such reductions. In addition, such Credits ~~offset~~s may not cause an exceedance of local WQS or local TMDLs. The generation of Credits ~~offsets~~ are ~~to be in addition to reductions already needed~~ to meet the allocations in the TMDL and must be consistent with applicable federal and state laws and regulations.

For nonpoint sources, this assumption and expectation is based on the fact that any current excess, new or increased nonpoint source loadings not accounted for in the TMDL's LA will have to be offset and environmental uplift provided by appropriate reductions from other sources if the TMDL's pollutant loading cap and applicable WQS are to be met. For permitted point sources, the assumption and expectation also is based on the statutory and regulatory requirements that effluent limits for any such discharges are derived from and comply with all applicable WQS and are consistent with the assumptions and requirements of any available WLAs [CWA sections 301(b)(1)(C), 303(d); 40 CFR 122.44(d)(1)(vii)(A) & (B)].

In addition, CWA section 117(g) authorizes EPA to ensure that management plans are developed and implementation is begun to achieve and maintain the Bay's nutrient goals. If jurisdictions authorize new or increased loadings without a specific TMDL allocation, a trading program ~~n offset~~ is a necessary component of any such management plan. Accordingly, the Bay TMDL assumes that new point source dischargers, without an allocation in the TMDL (or in other words, with a zero allocation), will purchase Credits ~~find~~ in an

amount sufficient ~~offsets large enough~~ to compensate for their entire additional loading and also provide environmental uplift within the same watershed segment. The TMDL similarly assumes that point source dischargers that increase pollution loading will purchase Credits ~~find offsets large enough~~ sufficient to compensate for the entire increase in their loading, provide environmental uplift, and ~~to~~ meet their Water Quality Based Effluent Limit (WQBEL) consistent with the WLA in the TMDL. In the case of new or increased loading from sources other than permitted point source dischargers, jurisdictions are to estimate loadings and ensure trades ~~offsets~~ that fully compensate and provide environmental uplift for this estimated increase in pollutant load.

Although EPA assumes some flexibility in the design and content of Bay jurisdiction ~~offset~~ trading programs, EPA expects that the jurisdictions will develop and implement programs ~~for offsetting new and increased loadings~~ consistent with the definitions and common elements described in detail in Appendix S. Jurisdictions with existing trading programs that address current excess, new or increased loadings (such as several jurisdictions have), should ensure that their programs are ~~address new or increased loads~~ consistent with the definitions and common elements in Appendix S.

EPA is interested in comment on the extent to which definitions, common elements and program features described here and in Appendix S for current excess, new or increased loadings of nitrogen, phosphorus and sediment should also be applicable to trading among existing sources of those pollutants for purposes of achieving their WLAs or LAs under the Bay TMDL. (This is excellent as this is also what I am trying to provide in my comments etc.).

10.1.3 Additional Trading ~~Offset~~ Program Features

EPA expects that the jurisdictions also may use the following features to build their trading ~~offset~~ programs for current excess, new or increased loadings of nitrogen, phosphorus, and sediment:

Environmental Uplift: ~~Net Improvement Offsets~~: For purposes of the Bay TMDL, this means a credit trade ~~n offset~~ at a ratio greater than merely accounting for the entire current excess, new or increased load. The jurisdiction's ~~offset program~~trading program needs to provide the authority and procedures for invoking such a provision. This tool should ~~may~~ be used as a means to accelerate load reductions where a jurisdiction is not on a schedule to ensure that nitrogen, phosphorus, and sediment controls are in place by 2017 and 2025 to meet interim and final target loads, respectively. This may be determined to be needed based on an EPA evaluation of a jurisdiction's progress on its WIP and 2-year milestones, as discussed in EPA's December 29, 2009 letter (USEPA 2009d). ~~Net improvement offsets~~ Environmental Uplift also may be used by a jurisdiction in the case of permitted point sources to offset new or increased loads from nonpoint sources or from point sources not expected to be permitted.

Aggregated Programmatic Credits: For purposes of the Bay TMDL, this means defining a programmatic solution for over-control of nutrients or sediment beyond the basic WIP strategies to achieve the TMDL allocation. In essence, it is an aggregation of credits from reductions by a class or subclass of sources where such reductions have been achieved by the jurisdiction or another duly authorized body. Such credits may be made available by the jurisdiction to offset new or increased loadings. In some circumstances, such class reductions also could be applied as a reallocation of loadings under the TMDL. Such reallocation may require modification of the TMDL.

Reserve-trade ~~Offset~~ Hybrid: For purposes of the Bay TMDL, this applies where a jurisdiction reserves a portion of its allocations for future growth and, once that allocation is depleted, uses a~~n~~ trading ~~offset~~ program as described herein.

10.1.4 EPA's Oversight Role of State Trading ~~Offset~~ Program

EPA expects the jurisdictions to describe their trading ~~offset~~ programs in their final Phase I and Phase II WIPs. EPA encourages jurisdictions to consult with EPA throughout the development of their trading ~~offset~~ programs to facilitate alignment with the CWA and the Bay TMDL. EPA has various oversight responsibilities under the CWA, MOUs for authorization of jurisdictions' NPDES programs, and the

TMDL/Executive Order 13508, including approval of revisions to WQS, review of NPDES permits, and provisions for reviewing and making recommendations regarding revisions to a jurisdiction's water quality management plans through the continuing planning process.

EPA intends to maintain regular oversight of jurisdictions' trading ~~offset~~ programs through periodic audits and evaluations. EPA will report its findings to the respective jurisdiction. Such oversight generally will be conducted on a programmatic basis, not an individual transaction~~offset~~ basis. EPA reserves its authority, however, to review any individual trades~~offset~~ (including an NPDES permit containing a Credit purchase~~n offset~~) and to comment on, object to, or issue the permit as needed if EPA determines that the transaction was ~~offset is~~ not consistent with a jurisdiction's trading ~~offset~~ program or determined to not be consistent with Appendix S. Where questions or concerns arise, EPA will use its oversight authorities to ensure that trading ~~offset~~ programs are fully consistent with the CWA and its implementing regulations. EPA recognizes the value of implementing a strategy for trading ~~offsets~~ programs that, wherever possible, is consistent among the jurisdictions to increase credibility, scalability, and broader regional implementation such as interstate trading. (Note: This last sentence is extremely important for rational, robust, and timely market development).

10.2 Water Quality Trading

EPA recognizes that a number of Bay jurisdictions already are implementing water quality trading programs. EPA supports implementation of the Bay TMDL through such programs, as long as they are established and implemented in a manner consistent with the CWA, its implementing regulations, and EPA's 2003 *Water Quality Trading Policy*1 and 2007 *Water Quality Trading Toolkit for NPDES Permit Writers*. An assumption of this TMDL is that trades may occur between sources contributing pollutant loadings to the same or different Bay segments, provided such trades do not cause or contribute to an exceedance of WQS in either receiving segment or anywhere else in the Bay watershed. EPA does not support any trading activity that would delay or weaken implementation of the Bay TMDL, that is inconsistent with the assumptions and requirements of the TMDL, or that would cause the combined point source and nonpoint source loadings covered by a trade to exceed the applicable loading cap established by the TMDL. In Section 10.1, EPA explains how Bay jurisdictions may accommodate current excess, new or increased loadings of nitrogen, phosphorus, and sediment either through a specific TMDL allocation or by offsetting those loadings with quantifiable and accountable reductions necessary to implement applicable WQS in the Bay and its tidal tributaries. In Appendix S, EPA discusses a number of definitions and common elements that EPA expects the jurisdictions to include and implement in their trading ~~offset~~ programs. EPA requests comment on the extent to which the policies and elements discussed in those sections should apply to water quality trades in Bay jurisdictions generally and not only to or just for offsets for new or increased nutrient and sediment loadings, but for financing municipal retrofitting of past and current contributions to pollution loadings exceeding proposed WLA's for point sources, and similar remediation and environmental uplift for nonpoint sources exceeding LA's as well, to help implement and achieve the Chesapeake Bay TMDL as quickly and efficiently as possible.~~-~~

10.3 Future Modifications to the Chesapeake Bay TMDL

Critical implementation issues for the Chesapeake Bay TMDL have been addressed in several ways. Through the establishment of the accountability framework, reasonable assurance has been built into the Chesapeake Bay TMDL development process. As part of this framework, the jurisdictions are expected to adhere to a phased schedule of development for their WIPs. EPA has provided clear expectations to the jurisdictions as they set forth and develop their WLAs and LAs for the Chesapeake Bay TMDL. EPA and its partners also have committed to taking an adaptive management approach to the Chesapeake Bay TMDL implementation. Among other things, jurisdictions can consider exchanges of the target loads within tributary basins and between nitrogen and phosphorus as long as WLAs and LAs, applied collectively across the entire watershed, will still result in model simulated achievement of the jurisdictions' Chesapeake Bay WQS across all 92 tidal Bay segments. Such exchanges could require modification of the Chesapeake Bay TMDL.

EPA has agreed to consider revisions to the Phase 5.3 Chesapeake Bay Watershed Model to address nutrient management effectiveness and suburban land characteristics and, if appropriate, modify the nutrient and sediment allocations. EPA also will consider whether any other modifications to the model are necessary as a result of public comment or otherwise and will make any changes as appropriate.
EPA has documented a three-phase process to ensure that it and its watershed partners continue to take steps to have all practices in place to restore local waters and the Chesapeake Bay by 2025, with 60 percent achieved by the 2017 mid-point mark (USEPA 2010e). If necessary, EPA will consider modifying the Chesapeake Bay TMDL in 2011 or 2017 should it appear that these interim marks will not be achieved, or upon a request for modification by one of the jurisdictions. The three-phase process is as follows:

In 2010

- On July 1, EPA assigned draft nitrogen and phosphorus allocations to the jurisdictions by major river basin and included a temporary reserve for any shift in loads that may occur from two specific Bay watershed model refinements (nutrient management effectiveness and suburban land characteristics).
- On August 13, EPA assigned draft sediment allocations to the jurisdictions by major river basin.
- The jurisdictions submitted their draft Phase I WIPs on September 1 (Virginia on September 3).
- On September 24, EPA issued a draft Chesapeake Bay TMDL for a 45-day formal public comment period.
- The jurisdictions are expected to submit their final Phase I WIPs by November 29.
- By December 31, EPA will establish the Chesapeake Bay TMDL.

In 2011

- EPA has agreed to make revisions to the partnership's Phase 5.3 Chesapeake Bay Watershed Model to address nutrient management effectiveness and suburban land characteristics and, if appropriate, modify the nutrient and sediment allocations.
- The jurisdictions are expected to submit their draft Phase II WIPs by June 1 and their final Phase II WIPs by November 1, 2011. The Phase II WIPs are expected to include finer-scale load distributions as described in EPA's November 4, 2009 letter and any updates resulting from the Bay watershed model revisions.
- Along with their final Phase II WIPs, the jurisdictions would submit for public comment any intention to modify the Chesapeake Bay TMDL allocations.
- EPA will modify the Chesapeake Bay TMDL, if necessary, by December 31, 2011.

In 2017

- Before 2017, EPA will review the full suite of Bay models on the basis of the best available science and decision-support tools and consider whether updated models should be developed to support Phase III WIPs and potential modifications to Chesapeake Bay TMDL allocations.
- In 2017, jurisdictions are expected to submit draft Phase III WIPs by June 1, 2017 and final WIPs by November 1, 2017 with a focus on ensuring that all practices are in place by 2025 as needed to fully restore the Bay and its tidal waters.
- EPA will modify the Chesapeake Bay TMDL, if necessary, by December 31, 2017.